

388 East Boynton Road • Kaysville, Utah 84037 • (801) 544-3641

14 September 1991

Pamela Grubaugh-Littig  
Permit Supervisor  
Utah Division of Oil Gas & Mining  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

**RECEIVED**

SEP 16 1991

Ms. Grubaugh-Littig,

DIVISION OF  
OIL GAS & MINING

Re: NOV #N91-26-7-2, Primary Road Drainage Controls and Enlarged  
Shop Pad, Bear Canyon Mine, Co-Op Mining Company,  
ACT/015/025, Emery County, Utah

#2

The on-site visit held Friday 13 Sept 1991 was very helpful in understanding the concerns of Mr. Bill Malencik. We will be forwarding to the Division our response. We understand that the abatement has been extended to 25 Sept 1991.

Attached with this letter are copies of the sediment pond material tests and the compaction test results. The test labeled "SED POND" is from a composite sample taken from the material in the Temporary storage area that originated in the sediment ponds. The test labeled "91 SEDA FILL" was taken from the material from Sed Pond A that was used in the Shop Pad extension. Please notify me if there are any questions.

Thank you,



Kimly C. Mangum, P.E.  
Permitting & Compliance Consultant.

cc: Wm. J. Malencik  
Co-Op Mining Co.

LOWDERMILK

# NUCLEAR RELATIVE COMPACTION TEST DATA

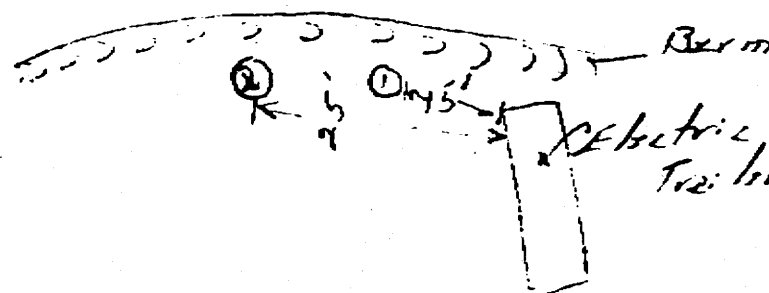
Project Shap PadJob Number Co-Op MineDate 8-29-91Taken By W. J. K. W. J.

Test Number	1	2	3	4	5	6	7	8	9	0
Station										
Offset										
Elevation	<u>Top of Fill</u>	<u>Top of Fill</u>								
Moisture & Depth	<u>60+6"</u>	<u>60+8"</u>								
Density Count	<u>2158</u>	<u>1220</u>								
Moisture Count	<u>130</u>	<u>148</u>								
Moisture PCF	<u>132</u>	<u>126</u>								
% Moisture	<u>125</u>	<u>108</u>								
Wet Density	<u>1235</u>	<u>1296</u>								
Dry Density	<u>1098</u>	<u>1151</u>								
Max. Obtainable Density	<u>1150</u>	<u>1150</u>								
Optimum Moisture	<u>10%</u>	<u>10%</u>								
% Relative Compaction	<u>95%</u>	<u>101%</u>								

## STANDARD COUNT

REMARKS:

Density	Moisture
<u>2460</u>	<u>676</u>





Inter-Mountain Laboratories, Inc.

2506 West Main Street

Farmington, New Mexico 87401

Tel. (505) 326-4737

CO-OP MINING COMPANY  
HUNTINGTON, UTAH  
MINE: BEAR CANYON

DATE REPORTED: September 11, 1991

Page 1 of 3

Lab No.	Location	Depths	pH	EC mmhos/cm @ 25°C	Satur- ation %	Calcium meq/l	Magnesium meq/l	Sodium meq/l	SAR	Coarse Fragments %	Sand %	Silt %	Clay %	Texture
13245	SED POND		8.5	2.49	28.9	17.4	7.10	4.04	1.15	58.8	65.8	24.7	9.5	SANDY LOAM
13246	91 SEDA FILL		7.9	2.84	27.8	18.9	12.8	3.46	0.87	17.7	57.3	29.6	13.1	SANDY LOAM



Inter-Mountain Laboratories, Inc.

2506 West Main Street

Farmington, New Mexico 87401

Tel. (505) 326-4737

CO-OP MINING COMPANY  
HUNTINGTON, UTAH  
MINE: BEAR CANYON

DATE REPORTED: September 11, 1991

Page 2 of 3

Lab No.	Location	Depths	Organic Matter %	Total Sulfur %	T.S. AB t/1000t	Neut. Pot. t/1000t	T.S. ABP t/1000t	Nitrate- Nitrogen ppm	Boron ppm	Avail Na meq/100g	Exch Na meq/100g
13245	SED POND		3.2	0.16	5.00	186.	181.	1.23	1.06	8.87	8.75
13246	91 SEDA FILL		5.7	0.04	1.25	241.	240.	0.97	0.60	8.13	8.03

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage, Exch= Exchangeable, Avail= Available



InterMountain Laboratories, Inc.

2506 West Main Street

Farmington, New Mexico 87401

Tel. (505) 326-4737

CO-OP MINING COMPANY  
HUNTINGTON, UTAH  
MINE: BEAR CANYON

DATE REPORTED: September 11, 1991

Page 3 of 3

Lab No.	Location	Depths	Bulk Density *	Water Retention Difference in/in*	Total Kjeldahl Nitrogen %	1/3 bar	15 bar	H2O Sol Selenium ppm
13245	SED POND		1.20	<0.1	0.30	6.7	5.7	<0.02
13246	91 SEDA FILL		2.10	<0.1	0.09	7.3	6.2	<0.02

\* Air dry bulk density was substituted for 1/3 bar bulk density in calculations.

Abbreviations for extractants: PE= Saturated Paste Extract, H2OSol= water soluble, ABPTA= Ammonium Bicarbonate-DPTA, AAO= Acid Ammonium Oxalate